APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,511	03/08/2004	Abraham Fisher	180/03861	1927

44909   7590   08/21/2007
WOLF, BLOCK, SCHORR & SOLIS-COHEN LLP
250 PARK AVENUE
NEW YORK, NY 10177

EXAMINER
KAO, WEI PO ERIC

ART UNIT	PAPER NUMBER
2609	

MAIL DATE	DELIVERY MODE
08/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 March 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *4,6,7,9,19,20,23 and 25* is/are allowed.

6)☒ Claim(s) *1-3,5,8,10-18,21,22,24 and 26-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *See Continuation Sheet*.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :06/24/2004, 03/29/2005, 03/28/2006, 10/19/2006,.

DETAILED ACTION

Claim Objections

1.   Claims 6, and 7 are objected to under 37 CFR 1.75 because of the following informalities:

The claimed terms, "the shortest target time," of claim 6 line 7 seems to refer "a closest target time" of line 2. It is suggested to change to "the closest target time."

Claim 7 is objected to because they depend on an objected claim, namely claim 6.

Appropriate correction is required.

Claim Rejection - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3.   Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For Claim 1, the claimed terms, "the assigned channels," of line 5 have no antecedent basis.

The Claims 2-17 are rejected as being dependent of the rejected claim 1.

Claim Rejection - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

> (b) the invention was patented or described in a printed publication in this or a
> foreign country or in public use or on sale in this country, more than one year
> prior to the date of application for patent in the United States.

5.   Claims 18 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Witchey,

U.S. Patent No 5563885.

For Claim 18, Witchey teaches that **a method of scheduling the handling of communication**

channels by a processor assigned to handle a plurality of channels (see Abstract Line 1-4,

Column 2 Line 50-55) **comprising: determining for each channel, handled by the processor,**

a target time by which time it should receive processing (see Abstract Line 4-14, Column 2

Line 56-63); **selecting, based on the target times of the channels, a plurality of assigned**

channels, having two or more different target times, from which a next handled channel is

to be selected (see Figure 5A-B, Column 8 Line 43-67); **choosing for processing one of the**

selected channels at least partially based on considerations not related to the target times of

the channels; and scheduling the processor to handle the chosen channel (see Column 9 Line

3-12). For Claim 26, Witchey teaches that **the method comprising: choosing a plurality of**

channels based on considerations not related to timing issues and choosing therefrom a

single channel based on the target times (see Column 9 Line 3-12).

Claim Rejection - 35 USC § 103

6.   This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

    1.   Determining the scope and contents of the prior art.
    2.   Ascertaining the differences between the prior art and the claims at issue.
    3.   Resolving the level of ordinary skill in the pertinent art.
    4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 1, 3, 10, 13, 14, 27, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Witchey, U.S. Patent No 5563885 in view of Acharya et al, U.S. Patent No 6502062.

For Claims 1, 3, 10, 14 and 27, Witchey teaches that **a method/apparatus of scheduling the handling of communication channels by a processor assigned to handle a plurality of channels** (see Abstract Line 1-4), **comprising: determining for each channel, handled by the processor, a target time by which time it should receive processing** (see Abstract Line 4-14); **selecting one or more of the assigned channels whose data is to be handled next, based on the target times of the channels** (see Figure 5A-B, Column 8 Line 43-67). For Claims 13 and 28, Witchey teaches that **the method comprising: selecting a plurality of channels having different target times** (see Figure 5A-B, Column 8 Line 43-67). For Claim 29, Witchey teaches

that **the apparatus wherein, the memory is also adapted to store software modules run by the processor and wherein the memory has a size which can store fewer than all the software modules required to handle the plurality of channels.** Note: The phrase "adapted to" recited in claim 29 are not positively recited claim limitations. Therefore, the limitations after the phrase are not considered the claim limitations.

For Claims 1, 10, 27, Witchey does not teach that **the method/apparatus, wherein when more than one channel is selected, choosing for handling before other channels, at least one of the selected channels based on a consideration directed at minimizing the average processing time of the channels.** For Claim 3, Witchey does not teach that **the method comprising: determining an average duration of the handling of the channel.** For Claim 14, Witchey does not teach that **the method comprising: choosing based on the protocol governing the handling of the data of the channels.**

For Claims 1, 10, 27 Acharya et al teach that **the method/apparatus, wherein when more than one channel is selected, choosing for handling before other channels, at least one of the selected channels based on a consideration directed at minimizing the average processing time of the channels** (see Abstract Line 1-11, Figure 1, Column 3 Line 11-20). For Claim 3, Acharya et al teach that **the method comprising: determining an average duration of the handling of the channel** (see Column 3 Line 11-20). For Claim 14, Acharya et al teach that **the method comprising: choosing based on the protocol governing the handling of the data of the channels** (see Column 3 Line 11-34).

Witchey and Acharya et al are analogous art because they are from same field of providing a system and method for scheduling data flow among multiple channels.
At the time of the invention, it would have been obvious to a person ordinary skill in the art to implement the minimum flow algorithm from Acharya to Witchey's scheduling system.
The motivation would have been that by doing so, data flow among multiple channels can be less restricted and further lower the system buffering requirements.

Therefore, it would have been obvious to combine Witchey and Acharya et al to obtain the claims 1, 3, 10, 13, 14, 27, 28 and 29.

10.   Claims 2, 5, 11, 12, 17 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable Witchey, U.S. Patent No 5563885 and Acharya et al, U.S. Patent No 6502062 as applied to claim 1 above, and further in view of Netzer et al U.S. Publication No 20030014484.

For Claim 2, Witchey and Acharya et al teach all limitations as disclosed in the paragraph 9 of this office action except that **the method, wherein determining a target time for each channel comprises determining a time by which the channel needs to receive a handling session in order to avoid starvation.** For Claim 5, Witchey and Acharya et al teach all limitations as disclosed in the paragraph 9 of this office action except that **the method, wherein selecting based on the target times comprises selecting the channels having a shortest duration until their target times.** For Claim 11, Witchey and Acharya et al teach all limitations as disclosed in the paragraph 9 of this office action except that **the method comprising: choosing from the selected channels that have an equal quality of service rating.** For Claim 12, Witchey and Acharya et al teach all limitations as disclosed in the paragraph 9 of this office action except that **the method comprising: choosing for handling all the selected channels before handling other channels.** For Claims 17 and 30, Witchey and Acharya et al teach all limitations as disclosed in the paragraph 9 of this office action except that **the method/apparatus comprising: choosing based on a consideration that minimizes time spent on memory transfers.**

For Claim 2, Netzer et al teach that **the method, wherein determining a target time for each channel comprises determining a time by which the channel needs to receive a handling session in order to avoid starvation** (see Paragraph [0037]). For Claim 5, Netzer et al teach that **the method, wherein selecting based on the target times comprises selecting the channels having a shortest duration until their target times** (see Paragraph [0037]). For Claim 11, Netzer et al teach that **the method comprising: choosing from the selected channels that have an equal quality of service rating** (see Paragraph [0092]). Claim 12, Netzer et al teach that **the method comprising: choosing for handling all the selected channels before**

handling other channels (see Paragraph [0016] [0093] [0099] e.g. all the selected channels has unlimited processing session, a channel is selected to have limited procession session is processed in the next cycle after all the selected channels have been handled). Claims 17 and 30, Netzer et al teach that **the method/apparatus comprising: choosing based on a consideration that minimizes time spent on memory transfers** (see Paragraph [0062-63]).

Witchey, Acharya et al and Netzer et al are analogous art because they are from the same field of providing a system and method for scheduling data flow among multiple channels.

At the time of the invention, it would have been obvious to a person ordinary skill in the art to implement the capability of handling data flow at the entrance of the multiple channels according to various scheduling schemes from Netzer to the scheduling system and method of Withcey.

The motivation would have been that various scheduling schemes allows various type of connections to be processed in the manner that all the connections maintain their required performance level.

Therefore, it would have been obvious to combine Witchey, Acharya et al and Netzer et al to the claims 2, 5, 11, 12, 17 and 30.

11.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable Witchey, U.S. Patent No 5563885 and Acharya et al, U.S. Patent No 6502062 as applied to claim 1 above, and further in view of Dennis U.S. Patent No 6195699.

For Claim 8, Witchey and Acharya et al teach all limitations as disclosed in the paragraph 9 of this office action except that **the method comprising: choosing at least one channel that requires processing by a software module already in a memory of the processor.**

For Claim 8, Dennis teaches that **the method comprising: choosing at least one channel that requires processing by a software module already in a memory of the processor** (see Column 3 Line 42-47, Column 4 Line 40-44, Column 8 Line 24-41).

Witchey, Acharya et al and Dennis are analogous art because they are from the same field of providing a system and method for scheduling data flow among multiple channels.

At the time of the invention, it would have been obvious to a person ordinary skill in the art to implement the real time scheduling scheme from Dennis to the scheduling system and method of Withcey.

The motivation would have been that the real time scheduling schemes reduce the scheduling table storing in the processor and further lower the system buffering requirements.

Therefore, it would have been obvious to combine Witchey, Acharya et al and Dennis to obtain the claim 8.

12.   Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable Witchey, U.S. Patent No 5563885 and Acharya et al, U.S. Patent No 6502062 as applied to claim 1 above, and further in view of Chin et al U.S. Patent No 6490298.

For Claim 15, Witchey and Acharya et al teach all limitations as disclosed in the paragraph 9 of this office action except that **the method comprising choosing based on the transmission rates of the channels.**

For Claim 15, Chin et al teach that **the method comprising choosing based on the transmission rates of the channels** (see Abstract, Column 1 Line 57-59).

Witchey, Acharya et al and Chin et al are analogous art because they are from the same field of providing a system and method for scheduling data flow among multiple channels or sources.

At the time of the invention, it would have been obvious to a person ordinary skill in the art to implement the functionality of assigning incoming sources/channels to a scheduler according to the transmission rate of each source/channel from Chin et al to the scheduling system and method of Withcey.

The motivation would have been that it is desired for a scheduling system and method to be flexible in order to handle the multiple source/channels when they change their bit rate frequently and on-the-fly.

Therefore, it would have been obvious to combine Witchey, Acharya et al and Chin et al to the claim 15.

13.   Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable Witchey, U.S. Patent No 5563885 and Acharya et al, U.S. Patent No 6502062 as applied to claim 1 above, and further in view of Cheng et al U.S. Publication No 20050043045.

For Claim 16, Witchey and Acharya et al teach all limitations as disclosed in the paragraph 9 of this office action except that **the method comprising choosing based on the types of the channels.**

For Claim 16, Cheng et al teach that **the method comprising choosing based on the types of the channels** (see Abstract, Paragraph [0027]).

Witchey, Acharya et al and Cheng et al are analogous art because they are from the same field of providing a system and method for scheduling data flow among multiple channels or sources.
At the time of the invention, it would have been obvious to a person ordinary skill in the art to implement the functionality of effecting time controlled time scheduling from Cheng et al to the scheduling system and method of Withcey.
The motivation would have been that it is desired to schedule the channels of the same type in order to reduce the amount of interference between channels when they have the same target time.
Therefore, it would have been obvious to combine Witchey, Acharya et al and Cheng et al to the claim 16.

14.   Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Witchey, U.S. Patent No 5563885 in view of Netzer et al U.S. Publication No 20030014484.

For Claims 21, 22 Witchey teaches all the limitations as disclosed in the paragraph 5 of this office action.

For Claim 21, Witchey does not teach that **the method comprising: selecting based on processing efficiency considerations.** For Claim 22, Witchey does not teach that **the method comprising: determining a time by which the channel needs to receive a handling session in order to avoid starvation.** For Claim 24, Witchey does not teach that **the method comprising: choosing a channel that requires processing by a software module already in a memory of the processor.**

For Claim 21, Netzer et al teach that **the method comprising: selecting based on processing efficiency considerations** (see Paragraph [0075] [0078]). For Claim 22, Netzer et al teach that **the method determining a time by which the channel needs to receive a handling session in order to avoid starvation** (see Paragraph [0037]).

Witchey and Netzer et al are analogous art because they are from the same field of providing a system and method for scheduling data flow among multiple channels.

At the time of the invention, it would have been obvious to a person ordinary skill in the art to implement the capability of handling data flow at the entrance of the multiple channels according to various scheduling schemes from Netzer to the scheduling system and method of Withcey.

The motivation would have been that various scheduling schemes allows various type of connections to be processed in the manner that all the connections maintain their required performance level.

Therefore, it would have been obvious to combine Witchey and Netzer et al to the claims 21 and 22.

15.   Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Witchey, U.S. Patent No 5563885 in view of Dennis U.S. Patent No 6195699.

For Claim 24 Witchey teaches all the limitations as disclosed in the paragraph 5 of this office action.

For Claim 24, Witchey does not teach that **the method comprising: choosing a channel that requires processing by a software module already in a memory of the processor.**

For Claim 24, Dennis teaches that **the method comprising: choosing at least one channel that requires processing by a software module already in a memory of the processor** (see Column 3 Line 42-47, Column 4 Line 40-44, Column 8 Line 24-41).

Witchey and Dennis are analogous art because they are from the same field of providing a system and method for scheduling data flow among multiple channels.

At the time of the invention, it would have been obvious to a person ordinary skill in the art to implement the real time scheduling scheme from Dennis to the scheduling system and method of Withcey.

The motivation would have been that the real time scheduling schemes reduce the scheduling table storing in the processor and further lower the system buffering requirements.

Therefore, it would have been obvious to combine Witchey and Dennis to obtain the claim 24.

Allowable Subject Matter

16.   Claims 4, 6-7, 9, 19-20, 23 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17.   The following is a statement of reasons for the indication of allowable subject matter:

For claims 4, 6-7, 9, 19-20, 23 and 25, prior art fails to show alone or in combination that the specific limitations of assigning channels accordingly to be scheduled by the scheduling processor.
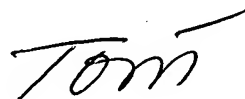
Conclusion

18.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pedersen, U.S. Publication No 20040218545 and Chapweske, U.S. Publication No 20040172476 are cited to show a different scheduling system and method to handle multiple channels or source.

19.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wei-po Kao whose telephone number is (571)270-3128. The examiner can normally be reached on Monday through Friday, 8:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dong Ton can be reached on 571-272-3171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

W.K.

DANG T. TON
SUPERVISORY PATENT EXAMINER